**Liverpool** John Moores University

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| Title: | SPORT AND EXERCISE BIOMECHANICS |
| Status: | Definitive |
| Code: | **6019SPOSCI** (117546) |
| Version Start Date: | 01-08-2018 |
| Owning School/Faculty: | Sport and Exercise Sciences |
| Teaching School/Faculty: | Sport and Exercise Sciences |

| Team | Leader |
|---|---|
| Mark Lake | Y |
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| **Academic Level:** | FHEQ6 | **Credit Value:** | 24 | **Total Delivered Hours:** | 48 |
| **Total Learning Hours:** | 240 | **Private Study:** | 192 | | |

**Delivery Options**
Course typically offered: Standard Year Long

| Component | Contact Hours |
|---|---|
| Lecture | 36 |
| Practical | 10 |

**Grading Basis:** 40 %

**Assessment Details**

| Category | Short Description | Description | Weighting (%) | Exam Duration |
|---|---|---|---|---|
| Report | Lab report | Human Locomotion | 25 | |
| Essay | Critique | Biomechanics Modelling | 25 | |
| Exam | Essay | Biomechanical Mechanisms | 50 | 2 |

**Aims**

*The aim of this module is to critically appraise the key biomechanical concepts and*

*research areas within sport and exercise and related equipment. Included in that appraisal will be the analysis of the biomechanics of locomotion and current biomechanical perspectives on a variety of sports skills.*

## Learning Outcomes

After completing the module the student should be able to:

1 Analyse human locomotion and develop experimental reporting skills.
2 Critically review selected sports and exercise skills in biomechanical terms.
3 Critically evaluate a sports skill using biomechanical modelling software.
4 Critically evaluate the biomechanical mechanisms involved in sport and exercise skills.

## Learning Outcomes of Assessments

The assessment item list is assessed via the learning outcomes listed:

| | | |
|---|---|---|
| Human Locomotion | 1 | 2 |
| Biomechanics Modelling | 3 | |
| Biomechanical Mechanisms | 4 | |

## Outline Syllabus

*Biomechanical Applications in sport performance including a range of selected sports skills*
*Mathematical modeling and simulation (open SIMM software package)*
*Biomechanical Applications in health*
*Biomechanical Applications in sports injury*
*Biomechanical Applications in Sports and Exercise Equipment*
*Biomechanics of muscle, tendons and joints*

## Learning Activities

Students should attend lectures and participate in practicals on a weekly basis. They also will have some tutorial sessions on lecture material and computer simulation packages. In addition, they will also have to complete a laboratory report and an essay interpreting results from modelling software.

## Notes

This module is focused on biomechanical mechanisms and concepts in Sport and Exercise Science, in contrast to the other level 6 module Human Movement Science which covers some general concepts in exercise science together with a sound biomechanical quantitative foundation. Therefore, this module is geared towards

students who are specialising in the biomechanics discipline.